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DIAGNOSING CATALYST EFFICIENCY CODES

In some of our previous Tech Bulletins we have written about all the factors that could contribute to a P0420 or P0430, Catalyst Efficiency code. In this months bulletin we would like to give you a concise, step-by-step guide to diagnosing these faults.

As with any code, the simple replacement of a component for the fault set tends to be a recipe for disaster. There is almost always some diagnosis that needs to be completed to determine the root cause of the failure. The “Catalyst Efficiency” code is a prime example of this. So let’s start at the beginning.

First, do a visual check of the entire exhaust system. This should include a leak test paying special attention to the area leading up to the converter. As far the converter itself, look for missing or damaged heat shields and air tubes where appropriate. Also check for dented or damaged converter shells and loose substrates by tapping on the converter shell. A quick look at the inside of the tail pipe may reveal a rich running vehicle (presence of black soot). Also if convenient, remove the oxygen sensor and check for signs of contamination.

The next step will be to hook up a scan tool to the vehicle and check for all codes in the system. Some scan tools offer a complete Systems Check, PCM, BCM, Cluster, OBD II etc, and will issue an overall report on the vehicles ‘state of health’. You should be particularly focused on current PCM codes as well as any pending and history codes. Here our concern is any code that would affect fuel trim or cylinder efficiency. These would include misfire, O2 and O2 heater, fuel trim, air flow, etc. Any faults that might alter what goes out through the exhaust can affect how well the converter performs.

If no other codes are present, a thorough scan of all available data is necessary to determine if there are any potential problem areas. An example of this would be Long Term Fuel Trim (LTFT), where a reading of $\pm 12\%$, although not high enough to turn on the light, is an indication that a problem exists. Also, using Mode ‘6’ diagnostics can be of great help in predicting failures before they occur.

Lastly, a check for any Technical Service Bulletins (TSB’s) relating to the vehicle will rule out any manufacturer related problems stemming from production errors or just necessary updates to the system.

As stated earlier, many of these diagnostic areas have been discussed in detail in previous bulletins.

TB-80003 – Oxygen Sensors 101
TB 80009 – OBD II Catalyst Monitoring
TB 80010 – Interpreting Fuel Trim Data
TB-80011 – Misfire Detection
TB-80012 & 80013 – Diagnosing NOX Failures I & II

These are available on our website at www.Magnaflow.com (under Dyno and Tech Support)

We are also coming out with an updated version of our **Converter Basics** which will be on our website. These and other resources including our Live Tech Line are made available to help support your business. We are always open to suggestions and welcome input from our customers.

Cleaning up the environment...one converter at a time

Gary

